



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,400	01/05/2001	Ariela Zeira	I-2-149.1US	5252

24374 7590 12/27/2004

VOLPE AND KOENIG, P.C.  
DEPT. ICC  
UNITED PLAZA, SUITE 1600  
30 SOUTH 17TH STREET  
PHILADELPHIA, PA 19103

EXAMINER
----------

BOCURE, TESFALDET

ART UNIT	PAPER NUMBER
----------	--------------

2631

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/755,400

Applicant(s)

ZEIRA, ARIELA

Examiner

Tesfaldet Bocure

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4-6.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

Art Unit: 2631

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The Examiner has accepted the information disclosure statements received on 04/09/01, 06/18/01 and 12/04/03 and the initialed copies (4 copies) of the information disclosure statements are attached with this correspondence.

### ***Specification***

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

3. The disclosure is objected to because of the following informalities: "Equation 6, 52" in page 6, line 12 should be amended to read as ---Equation 6---.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bernd Steiner et al. (European Transactions on Telecommunications and related technology).

Bernd Steiner et al. (Bernd hereinafter) teaches a communication system for communicating a burst signal between the mobile and base stations (see fig.1 and page 40/40, first column) comprising: a receiver for receiving the midamble signals having a  $k$  midambles received in a  $K$  burst signal, claimed maximum  $N$  midamble in claim 5 and  $K$  burst in claim 6, (fig.1) and generating vector from the midamble (see equations 36a and 36b); constructing a circular matrix from the received midamble (see figs 2 and 3 and equations 21-34); and estimating the channel according to the vector and the circular matrix (see equation 37) as in claims 1,6,8 and 14.

Further to claims 2-4,11-13, and 17-19, Bernd also teaches that:

The channel estimation uses a maximum likelihood estimation (see p 41/41), claimed least square estimation as in claims 2,11 and 17;

A single cyclic correlator (see fig.4) as in claims 3,13 and 19;

Using a discrete Fourier transformation in estimating the channel (see equations 35a and 35b) as in claims 4,12 and 18.

Further to claims 7,9,10,15 and 16, Bernd also teaches that:

The dimension of estimation is the length of the channel response (see col. 42/42 and equations 21 and 22) as in claim 7;

The midambles can be for transmitted from different users to be detected by the base station, claims single user detection in claims 10 and 16; and the midamble for detecting the channel characteristics can be transmitted by a base station to a multiple user, claimed multi-user in claims 9 and 15.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bernd Steiner et al. (European Transactions on Telecommunications and related technology).

Bernd teaches the claimed subject matter in claim 14 as indicated above.

Bernd fails to teach that the transmission by the base station being 2Mbps. However transmission of 2Mbps or above in the burst transmission of CDMA signal is notoriously known and the system of Bernd would be designed to transmit the 2Mbps at the time the invention was made.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. IEEE publications "Joint Detection with Low Computational Complexity for Hybrid TD-CDMA Systems" and "Low Complexity Data Detection Using Fast Fourier Transform Decomposition of Channel Correlation Matrix" by Benvenuto et al. and Jung-Lin et al respectively disclose channel estimation of a burst communicated CDMA signal.

Art Unit: 2631

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tesfaldet Bocure whose telephone number is (571) 272-3015. The examiner can normally be reached on Mon-Thur (7:30a-5:00p) & Mon.-Fri (7:30a-5:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T.Bocure

Tesfaldet Bocure  
Primary Examiner  
Art Unit 2631

